UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,687	03/11/2005	Yoshiaki Okuno	1190-0603PUS1	7314

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EXAMINER
REDDING, THOMAS M

ART UNIT	PAPER NUMBER
2624	

NOTIFICATION DATE	DELIVERY MODE
12/12/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

PTOL-90A (Rev. 04/07)

		Application No.	**Applicant(s)**
		10/527,687	OKUNO ET AL.
Office Action Summary		**Examiner**	**Art Unit**	
		Thomas M. Redding	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *20-33* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *20-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some *   c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/10/2007 and 3/11/2005.*

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

Specification

1.   The title of the invention is not descriptive. A new title is required that is clearly

indicative of the invention to which the claims are directed.

The following title is suggested: "Edge-Directed Image Sharpening Method".

2.   The abstract of the disclosure is objected to because it makes reference to

symbols in the drawings (e.g. "edge width detection circuit (1)", "image data (DI)"). The

sheet or sheets presenting the abstract may not include other parts of the application or

other material. The purpose of the abstract is to enable the United States Patent and

Trademark Office and the public generally to determine quickly from a cursory

inspection the nature and gist of the technical disclosure. Correction is required. See

MPEP § 608.01(b) and CFR 37 § 1.72(b).

Claim Objections - 37 CFR 1.75(a)

3.   The following is a quotation of 37 CFR 1.75(a):

> The specification must conclude with a claim particularly pointing out and distinctly claiming the subject
> matter which the applicant regards as his invention or discovery.

4.   Claims 28 is objected to under 37 CFR 1.75(a), as failing to particularly point out

and distinctly claim the subject matter which application regards as his invention or

discovery. Claim 28 recites the limitation "specifying an amplitude of the localized

zoom ratio to adjust the edge width of the edge portion to a desired edge width" in line

2. There is insufficient antecedent basis for this limitation in the claim. The term "zoom

ratio" has not been defined. For purposes of examination, the claim will be presumed to

be read as "specifying an amplitude of the localized ***conversion*** ratio to adjust the edge

width of the edge portion to a desired edge width

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6.   Claim 20-33 are rejected under 35 U.S.C. 102(b) as being anticipated by

Someya et al. (US 2002/0030690 A1 - referenced in IDS of 3/11/2005).

        Regarding claim 20, Someya discloses [a]n image processing method,

comprising:

        detecting an edge width of an edge portion of input image data ("r is the distance

across the edge, normalized so that the width of the edge (b+c) is unity", Someya,

paragraph 136);

        determining a localized conversion ratio based on the edge width, wherein the

localized conversion ratio is localized to a segment of the edge portion

(" $hc2 = n + (k \times abs(hd1))$ if $0.0 \le r < 0.5$

        $hc2 = n - (k \times abs(hd1))$ if $0.5 \le r < 1.0$ ", Someya, paragraph 136, hc2 is the

horizontal zoom ratio which is equivalent to the localized conversion ratio, n is the base

zoom ratio, r is a normalized edge width);

        and generating an output image by applying the localized conversion ratio to the

input image data to convert a number of pixels in the segment of the edge portion ("FIG.

14D depicts expanded output image data Po obtained by interpolation with the variable

zoom ratio hc2", Someya, paragraph 138 and figure 14D).

Regarding claim 21, Someya discloses [t]he image processing method according to claim 20, said determining step determining a different localized conversion ratio for at least one segment of an edge portion of an image than for another segment of the edge portion (Someya, figure 14C, hc2 is the conversion ratio and it varies over the edge).

Regarding claim 22, Someya discloses [t]he image processing method according to claim 20, said determining step determining a localized conversion ratio that is higher for leading and trailing edge segments than for a non-edge segment (Someya, figure 10D shows the magnitude of hc2, which is higher than n, the non-edge ratio, for both leading and trailing edges at segment b).

Regarding claim 23, Someya discloses [t]he image processing method according to claim 20, said determining step determining a localized conversion ratio that is lower for a central edge segment than for a non- edge segment (Someya, figure 10D, non-edge segments, indicated by the letter "a", are scaled at a value of n which is lower than the values in the edge segment marked "b").

Regarding claim 24, Someya discloses [t]he image processing method according to claim 20, wherein a total sum of localized conversion ratios for leading, central and trailing edge segments is zero ("As illustrated in FIG. 14C, the average value of the zoom ratio over the entire edge is the basic zoom ratio (n)", Someya, paragraph 137, the local conversion ratios cancel out consider over an edge).

Regarding claim 25, Someya discloses [t]he image processing method according to claim 20, said determining step variably controlling the localized conversion ratio depending upon a control pattern determined on the basis of the edge portion ("$hc2 = n + (k \times abs(hd1))$ if $0.0 \le r < 0.5$; $hc2 = n - (k \times abs(hd1))$ if $0.5 \le r < 1.0$", Someya, paragraph 136, hc2 is the horizontal zoom ratio, n is the base zoom ratio, r is a normalized edge width, the scale factor is controlled based on the position within an edge as tracked by variable r, and by the value of the derivative across the edge, hd1);

Regarding claim 26, Someya discloses [t]he image processing method according to claim 20, said determining and applying steps determining and applying the localized conversion ratio in a horizontal direction, vertical direction or both horizontal and vertical directions ("Vertical zooming is performed in the same way as horizontal zooming. The horizontal zoom ratio and vertical zoom ratio are mutually independent, and different values of the parameter k may be used in the horizontal and vertical directions", Someya, paragraph 140, Someya teaches horizontal and vertical scaling).

Regarding claim 27, Someya discloses [t]he image processing method according

to claim 26, wherein the localized conversion ratio for the horizontal direction is different

than the localized conversion ratio for the vertical direction ("Vertical zooming is

performed in the same way as horizontal zooming. The horizontal zoom ratio and

vertical zoom ratio are mutually independent, and different values of the parameter k

may be used in the horizontal and vertical directions", Someya, paragraph 140).

Regarding claim 28, Someya discloses [t]he image processing method according

to claim 20, further comprising:

specifying an amplitude of the localized zoom ratio to adjust the edge width of the

edge portion to a desired edge width ("$hc2 = n + (k \times abs(hd1))$ if $0.0 \le r < 0.5$;

$hc2 = n - (k \times abs(hd1))$ if $0.5 \le r < 1.0$", Someya, paragraph 136, hc2 is the horizontal

zoom ratio, n is the base zoom ratio, r is a normalized edge width, the amplitude of the

scale factor is controlled based on the position within an edge as tracked by variable r);

Regarding claim 29, Someya discloses [t]he image processing method according

to claim 20, further comprising: detecting an edge reference position of the edge portion

("$hc2 = n + (k \times abs(hd1))$ if $0.0 \le r < 0.5$; $hc2 = n - (k \times abs(hd1))$ if $0.5 \le r < 1.0$", Someya,

paragraph 136, hc2 is the horizontal zoom ratio, n is the base zoom ratio, r is a

normalized edge width, the scale factor is controlled based on the position within an

edge as tracked by variable r, and by the derivative hd1);

said determining step determining the localized conversion ratio based on the edge width and edge reference position ("r is the distance across the edge, normalized so that the width of the edge (b+c) is unity", Someya, paragraph 136, variable r is normalized by the edge width, so r provides a position relative to the edge width).

Regarding claim 30, Someya discloses [t]he image processing method according to claim 20, further comprising: variably controlling a generation period of the localized conversion ratio ("$hc2 = n + (k \times abs(hd1))$ if $0.0 \le r < 0.5$; $hc2 = n - (k \times abs(hd1))$ if $0.5 \le r < 1.0$", Someya, paragraph 136, hc2 is the horizontal zoom ratio, n is the base zoom ratio, r is a normalized edge width, the zoom ratio is controlled based on the position within an edge as tracked by variable r, r defines the generation period).

Regarding claim 31, Someya discloses [t]he image processing method according to claim 20, further comprising:

variably controlling a maximum and/or minimum value of the localized conversion ratio ("$hc2 = n + (k \times abs(hd1))$ if $0.0 \le r < 0.5$; $hc2 = n - (k \times abs(hd1))$ if $0.5 \le r < 1.0$", Someya, paragraph 136, hc2 is the horizontal zoom ratio, n is the base zoom ratio, r is a normalized edge width, the maximum and minimum values are controlled by the derivative hd1).

Regarding claim 32, Someya discloses [t]he image processing method according to claim 20, further comprising:

variably controlling a maximum value, minimum value, and/or generation period of the localized conversion ratio based on the edge width ("$hc2 = n + (k \times abs(hd1))$ if $0.0 \leq r < 0.5$; $hc2 = n - (k \times abs(hd1))$ if $0.5 \leq r < 1.0$", Someya, paragraph 136, hc2 is the horizontal zoom ratio, n is the base zoom ratio, r is a normalized edge width, the maximum and minimum values are controlled by the derivative hd1).

Regarding claim 33, Someya discloses [t]he image processing method according to claim 20, further comprising: displaying the output image on a display device ("a display unit that displays the output pixels", Someya, paragraph 23 and figure 46).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas M. Redding whose telephone number is (571) 270-1579. The examiner can normally be reached on Mon - Fri 7:30 am - 5:00 pm EST.
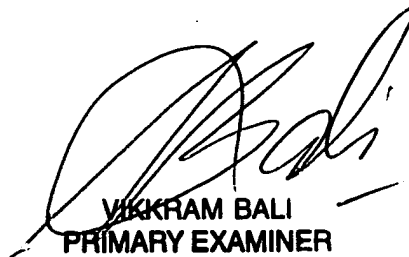
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on (571) 272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

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USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TMR/

VIKKRAM BALI
PRIMARY EXAMINER